

REMARKS

In the above-identified Office Action the claims were again rejected as being anticipated by the cited Takahashi patent. In this regard, however, Applicant submits that a close study reveals that Takahashi does not disclose the claimed invention which requires that a signal output line for outputting a signal obtained by amplifying a signal generated in a photoelectric conversion portion of a unit cell by an amplifying means also serves as a control line for at least one of the control functions of selection, transfer and reset, in a single unit cell. Specifically, in the present invention, the term "signal output line" clearly means a line for outputting a signal obtained by amplifying a signal generated in a photoelectric conversion portion of a unit cell. In Takahashi such amplification is effected by amplifying means which correspond to, for example, the vertically drawn signal lines connected to the transistors 6 and 7 in Figure 1 of Takahashi. However, the reset control line ΦRo of Takahashi, relied upon by the Examiner, is no more than a line which outputs a control signal from a vertical scanning circuit and is not for outputting a signal obtained by amplifying a signal generated in a photoelectric conversion portion of a unit cell. This same deficiency applies to other lines (e.g., ΦTxo or (ΦSo) outputted from the vertical scanning circuit. Furthermore, although in Figure 1 of Takahashi, the reset control line ΦRo and the vertically extending signal output line connected to the transistors 6 and 7 cross perpendicularly to each other, they are not electrically connected to each other. Instead, in Figure 1, an actual electrical connection is represented by a black dot.

Accordingly, Takahashi neither discloses nor suggests the key feature of the present invention, wherein two different lines are provided by a single common line as shown, for example, at 58 in Applicant's Figs. 1 and 3.

Moreover, it is uncommon for a signal output line to provide a signal for controlling a switch. However, Applicant has found that by suitably designing the circuit an output obtained by amplifying an optical signal generated in a photoelectric conversion portion of a unit cell can also control a switch, instead of requiring a conventional, special switch control line outputted from a peripheral circuit such as a vertical scanning circuit or the like. Also, a circuit of this type is generally designed such that a signal output line is provided in a direction other than the direction of provision of control lines, so that the present invention provides a unique technical advantage wherein, when a signal output line is used so as to also serve as a control line, there is room for layout optimization. That is, because one common line performs the function (1) of a signal output line for outputting a signal obtained by amplifying a signal generated in a photoelectric conversion portion of a unit cell, and the function (2) of a control line for at least one of selection, transfer and reset, it is possible to reduce the number of lines in a solid-state image pickup device, thereby expanding design possibilities and improving manufacturing yield as related to wiring (see page 10, lines 14-19).

None of the cited references, whether alone or combined, disclose this key feature of the present invention, much less the unique technical advantages resulting therefrom.

Finally, it is noted that new Claim 16 refers to the circuitry shown in Fig. 3, wherein the common line 58 is also common to two adjacent unit cells.

For these various reasons Applicant submits that all of the claims as now presented are allowable, and the issuance of a formal Notice of Allowance is solicited.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


John A. Krause
Attorney for Applicant
Registration No. 24,613

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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